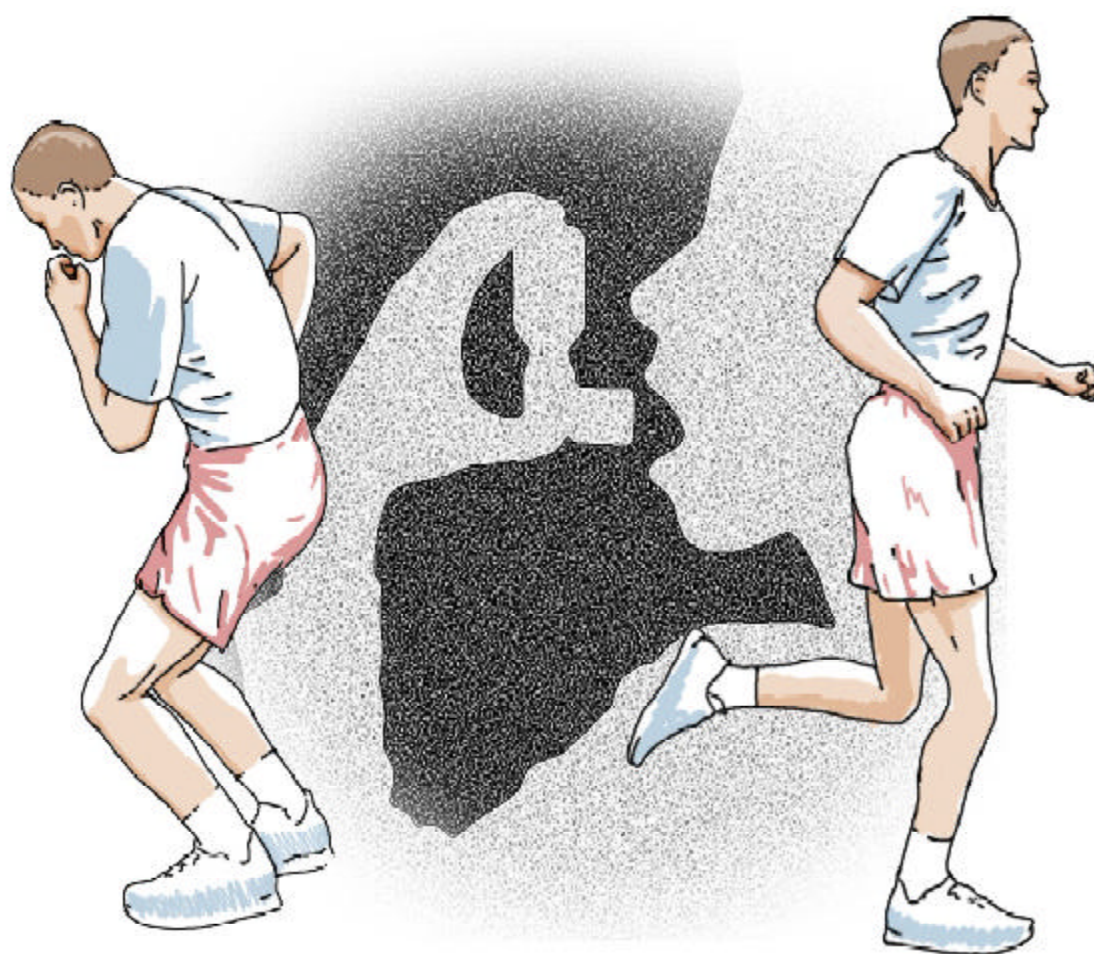


USACHPPM TODAY

Volume 9, No. 2

June 2002

A U.S. Army Center for Health Promotion and Preventive Medicine News Bulletin



When Exercise and Asthma Collide, see page 27.

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LET US KNOW

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If you have comments or questions concerning USACHPPM or any of its services, or wish to obtain any of the education materials we have available, please contact us.

We receive many calls and comments from our readers on what they read and what they would like to read. To those of you who have responded, "Thank you". Your input is important to us. To the rest of our readers, we would like to say "Let Us Know". If you have specific questions or if there are any topics you would like to see covered, send us an e-mail or write/call us.

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A MESSAGE FROM THE DEPUTY FOR TECHNICAL SERVICES

LEADERSHIP DEVELOPMENT WITHIN USACHPPM



"If you expect those who work for you to exercise their own judgment, provide them with the decision-making experience now. If you count on them to understand the conditions as best they can, share you past experience with them now. If your leadership depends on theirs, delegating responsibility and sharing stories is a foundation upon which it will reside. Thinking strategically when confronted with a crisis of challenge is a learned skill that requires sustained seasoning."

... The Leadership Moment

The above quote captures the essence of where USACHPPM needs to move if it is to position itself as a "world class Center of excellence for the systematic prevention of environmental, occupational, and disease threats to the health and performance of individuals and populations." In the next 2 years, our organization will have over 26 percent of the current civilian work force eligible for retirement. This presents a major challenge to an organization whose major product line is information and whose most valued assets is its people and the technical and leadership capabilities they bring to the table. We need to begin now to train our new supervisors, managers, and leaders of the future.

However, there are new challenges facing the Federal government. Our national leaders want Federal managers to focus on results rather than actions, tame technology, control costs, and change the organizational culture within government agencies. The Government Performance and Results Act of 1993 requires that Federally funded agencies develop and implement an accountability system based on performance measurement, including setting goals and objectives and measuring progress toward achieving these objectives. The intent of this Act is to improve Federal program effective-

ness and public accountability by promoting a new focus on results, service quality, and customer satisfaction.

Good leaders need to be motivated, capable of handling conflicts within the workplace, maintain their independence and challenge the way things are usually done, possess the ability to grasp all areas of leadership, and command the respect of those they lead. The development of competent civilian and military leaders is imperative as we continue moving forward and meeting new challenges.

Planning for our future is critical. The Center uses several tools to help plan and mold our future:

- The Strategic Plan. This plan describes the direction the Center will take in responding to future endeavors; it operationalizes the elements of the Commander's Campaign Plan.

- The Commander's Officer Evaluation Report Support Form. This form focuses on the future of health promotion and preventive medicine and how the Center will respond. It is the Commander's priorities for USACHPPM.

■ **USACHPPM Balanced Scorecard (BSC).** Our BSC translates our Strategic Plan (5 years) into a short-term (12-18 months) management-by-objectives action plan that is aligned with and supports the Army Medical Department BSC priorities, goals, and objectives. Our BSC gives us metrics for measuring short-term progress and performance in supporting the AMEDD strategic objectives.

■ By using these tools, managers are able to develop a corporate view that strives to balance the needs of our entire organization.

■ USACHPPM is committed to developing our leaders of tomorrow. Our goal is to develop and strengthen:

■ Our employees' broader career skills and knowledge.

■ Our employees' field knowledge, experience, and operations management capability.

■ Our employees' managerial and leadership skills.

To this end, we have updated existing information and guidance and developed new career development documents so employees will have information available to guide them in their career progression. There are several tools employees can use to develop their leadership knowledge and abilities.

■ **Army Civilian Training, Education, and Development System (ACTEDS).** This system is a planned development for civilian employees within their career fields. Each career program has an ACTED that provides a blending or progressive and sequential work assignments, formal training, and self-development for employees as they progress from intern/entry level to senior leadership positions.

■ **Human Resources Development Plan.** A methodology by which the Center will develop and sustain subject matter experts and leaders. Figure 1 outlines the key elements in this Plan.

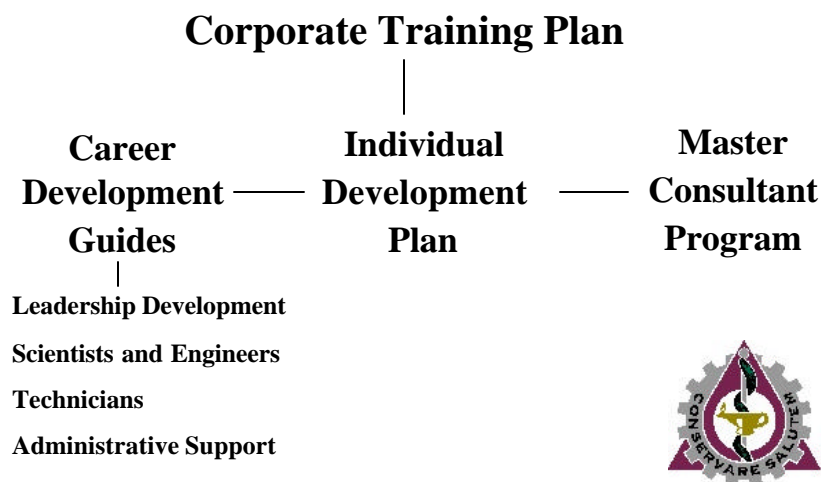


Figure 1. CHPPM Human Resources Development Plan

-
- **Corporate Training Plan.** This plan establishes the concept and framework for implementing a high quality, cost-effective program to develop our employees. It applies to all employees, to include military, civilian, and professional associates. The Corporate Training Plan is the umbrella document for the Center's Human Resources Development Plan.

- **Career Development Guides.** These are technical guides (TGs) employees can use as a starting point for their training and development. They provide general guidance on training and developmental assignments to improve job performance and build qualifications for advancement at each stage of an employee's career. They rely on ACTEDS and Individual Development Plans (IDPs), as well as counseling and mentoring by supervisors and managers. The following is a list of the USACHPPM career guides. You can review these documents on the USACHPPM Home Page, Publication Section

http://chppm-www.apgea.army.mil/armydocs.asp?pub_type=TG

- Leadership Development - TG 261, February 2002.
- Scientists and Engineers - TG 262, September 2001.
- Technicians - TG 263, January 2001.
- Administrative Support - TG 264, (Being Developed)

- **Individual Development Plan (IDP).** All employees within the Center will have an IDP to assist in their career progression. It is a systematic approach to career development. Employees and their supervisors identify and track technical and leadership/managerial career objectives in the areas of education, training, and experience opportunities. These documents are prepared annually and can be updated or modified at any time throughout the year by the mutual agreement of the employee and supervisor. CHPPM Form 413-R-E can be found electronically on the Army Medical Department Electronic Forms Support System.

- **Master Consultant Program.** This program recognizes technical employees who have demonstrated long-term, outstanding contributions to the Center in their scientific discipline. See USACHPPM Regulation 690-2, Master Consultant Program, December 2001 for more information.

Employees should be aware of the Civilian Leadership Training core curriculum as shown in Army Regulation 690-400, *Total Army Performance Evaluation System*. Figure 2 lists the core competencies required for civilian and military employees as they progress through their careers.

Progressive Development	Civilian	Military	
		Officer	Enlisted
Intern	Intern Leadership Development Course Action Officer Development Course	Officer Basic Course	Primary Leadership Development Course
Team Leader/High Potential Professional	Supervisory Development Course Leadership Education and Development (LEAD) Course Sustaining Base Leadership and Management Program (AMSC) CHPPM Leadership Development Program		Basic Noncommissioned Officer Course
Supervisor	Leadership Education and Development (LEAD) Course Leadership Education and Development Train-the-Trainer (LEAD-TTT) course Supervisor Development Course Sustaining Base Leadership and Management Program (AMSC)	Officer Advanced Course Combined Arms & Services Staff School (CAS ²) Pre-Command Course	Advanced Noncommissioned Officer Course
Manager	Manager Development Course Organizational Leadership for Executives (OLE) Personnel Management for Executives (PME I & II)	Command and General Staff Officer Course	First Sergeants Course
Senior Manager	Senior Service College Defense Leadership and Management Program (DLAMP)	Senior Service College	U.S. Army Sergeants Major Course
Senior Executive Service	GO/SES Orientation Training Conference GO/SES Force Integration Course Leadership Development Program, CCL EO Orientation APEX	GO/SES Orientation Training Conference* GO/SES Force Integration Course Leadership Development Program, CCL EO Orientation*	

Figure 2. Army Leadership Development Training Core Curriculum

The development of good leaders is important, and with the changing face of business and government, it is more important today than perhaps ever before. To answer this need, the Center developed a USACHPPM Leadership Development Program. The first class began in January 2002 and is being administered by Harford Community College. The program consists of one orientation/self-assessment session and ten 4-hour training sessions. It is open to all full-time, Career Status and Term employees, GS-11 and GS-12 employees (GS-13s are accepted on a case-by-case basis), who have obtained, at a minimum, an Associate of Arts degree.

Participants of the Leadership Development Program are expected to attend formal training sessions in leadership and management studies, prepare written critiques and lead informal discussions on outside reading assignments,

and prepare problem-solving presentations on administrative and operational problems facing the organization. The objectives of this program are to increase awareness of each participant's strengths and weaknesses as they pertain to leadership and management; develop and refine leadership skills; and gain insight into the mission, vision, and values of USACHPPM and the overall culture of the organization. TG 261, Leadership Development, Appendix B, contains a program overview, an outline of the program curriculum, an application format and form, and a suggested reading list. The next class will begin January 6, 2003 with applications due by December 15, 2002.

Currently, we are working with Harford Community College to develop a new USACHPPM Leadership and Team Building course designed for all full-time, Career Status and Term employees, GS-5 through GS-9

employees. This course will develop employees in such areas as interpersonal skills, effective communication, team formation and team building, problem solving, handling conflict, and leadership skills. This course will start in September 2002 with applications due by August 15, 2002.

Not only do we need to develop our future leaders, but we also need to reinforce leadership skills for our current supervisors and managers. Mr. James Brophy of Harford Community College will be conducting quarterly discussions for our senior leadership to refresh their leadership and managerial abilities and to address problems within the Center concerning leadership. We will begin with a Leadership Effectiveness Inventory for our Program Managers and Directors. Future discussions will deal with such topics as open communication and effective communication, creating learning opportunities for employees, and management commitment and responsibility.

For over a year, the Center has offered a web-based training program, FasTrac SkillSoft® to all employees. This training consists of a comprehensive library of interactive, directed learning courses. It focuses on professional development, leadership and management, and

business skills training. If you are not familiar with the FasTrac SkillSoft Training Library of Courses, you can explore the site at:

<http://chppm-cims.apgea.army.mil/skillsoft/>

In keeping with our core values - integrity, people, customer, excellence, and continuous improvement - USACHPPM is committed to improving the development of its future leaders. In order for an individual to be an effective leader, they need to be effective communicators (both written and oral). In addition, it is imperative that they have all the tools at their disposal to address the multitude of challenges that continuously occur in the conduct of any leadership position. It is incumbent on the leaders of today to prepare and train the leaders of tomorrow. Providing our aspiring leaders with training, developmental assignments, on-the-job experience, and leadership opportunities today will assure that the future direction and success of this organization will transition smoothly to the next generation of leaders.

®SkillSoft is a registered trademark of the SkillSoft Corporation, Nashua, NH.

FIFTH ANNUAL FORCE HEALTH PROTECTION CONFERENCE

The Fifth Annual Force Health Protection Conference and the Second Annual DOD Population Health and Health Promotion Conference will be held jointly, 9 - 16 August 2002, at the Baltimore Convention Center at the Inner Harbor in Baltimore, MD. The theme for the joint conferences is "Adapting to a Changing Global Environment". USACHPPM will host both conferences.

The core conference, beginning on 12 August, will include both plenary and breakout sessions designed to provide an exchange of information that has a wide application within the DOD community in the areas of homeland security, environmental health, population health,

complimentary and alternative medicine, behavioral health, veterinary medicine, medical research and development, injury prevention, nutrition, and spiritual health.

Conference information and registration can be found at

<http://chppm-www.apgea.army.mil/fhp>.

There is no registration fee!

POC: LTC Michael Custer, Director, DSN 584-4656, 410-436-4656, or 1-800-222-9698 or Ms. Jane Gervasoni, Deputy Director, DSN 584-5091, 410-436-5091, or 1-800-222-9698.

EXCELLENCE IN ENVIRONMENTAL ENGINEERING



Photographer: COL Paul Little, USACHPPM

(l to r) 1st row: MAJ Anthony J. Intrepido, Mr. Stephen L. Kistner, LTC Laurie A. Cummings, second row: CPT Dennis S. Palalay, and 2LT Ryan S. Bible display the grand prize trophy.

Personnel from USACHPPM accepted the 2002 Excellence in Environmental Engineering Operations/Management Grand Prize Award from the American Academy of Environmental Engineers (AAEE). A ceremony was held on 18 April at the National Press Club in Washington, DC.

The Excellence in Environmental Engineering competition of the AAEE exists to identify and reward the best of today's environmental engineering research, planning and design and the best operation and management of environmental facilities and programs. Launched 15 years

ago, the 2002 edition drew entries from around the world that typify the creativity and innovations of consulting engineers, municipal utilities, industrial corporations, and academics. This year's entries ranged from projects costing more than \$1 billion to projects costing just a few thousand dollars and from those requiring years to complete to one completed in just a few weeks.

The Academy's Excellence in Environmental Engineering competition singles out those projects and programs for recognition, which testify to the genius of humankind. Its criteria define what it takes to be the best in environmental practice – a holistic environmental perspective, innovation, proven performance and customer satisfaction, and contribution to an improved quality of life and economic efficiency. Those chosen for prizes in 2002 by an independent panel of distinguished experts addressed the broad range of modern challenges inherent in providing life-nurturing services for humans and protection of the environment.

The USACHPPM received the award in recognition for industrial hygiene and environmental engineering support to the Pentagon immediately following the terrorist attack on September 11. A team of experts deployed immediately to the Pentagon to determine the levels of hazardous contamination present due to the incident in and around the Pentagon; recommend mitigation of any hazards that pose a health threat to the occupants and personnel conducting operations in response to the incident; and measure and assess the health impact of a wide range of contaminants that might be present because of the aircraft and building fire damage. LTC Laurie A. Cummings was the Officer in Charge.

Both structural collapse and fire resulted when the aircraft struck the west side of the Pentagon. The specialists found no potential health risks. Using occupational standards, the team, along with scientists from other military services, evaluated potential health risks from hazards such as dust and ash; chemical residues from burning plastic, wood and other materials; or construction material (such as lead) or asbestos that are commonly found in older buildings such as the Pentagon. Test results were within occupational health standards established by the Occupational Safety and Health Administration. Additionally, results of air surveys for other common materials like carbon monoxide, carbon dioxide, nitrogen dioxide, and metals were also within health standards. The team also checked for possible radiation and found no hazards.

The Directorate of Laboratory Sciences completed over 1,500 sample analyses and reported in excess of 19,000 results of hazardous substances. The laboratory's extensive accreditations and certifications provided an unmatched quality and reliability to meet demanding regulatory requirements and scientific scrutiny required for this assessment.

It was vital for our national security that the 23,000 occupants of the Pentagon be allowed to return to their work environment as soon as it was deemed safe. This dynamic team effort involved many areas of occupational health and environmental engineering practices, all available at USACHPPM.

USACHPPM Personnel

DR. COLEEN B. WEESE IS AWARDED THE PRESTIGIOUS LOVELL AWARD



Coleen B. Weese, M.D., Program Manager, Occupational and Environmental Medicine, received the 2001 Joseph Lovell award on 13 May. She is the 23rd recipient of this award unique to USACHPPM.

Named in honor of the first Army

Surgeon General, a vigorous supporter of preventive medicine, the award is presented annually to a civilian or military scientist, engineer, health professional, or technician who has demonstrated exceptional initiative, creativity, innovative ability, and professional excellence in his or her occupational field.

She joined the US Army Environmental Hygiene Agency as a Preventive Medicine Officer in 1992 - 1994; served as Chief, Disease Control and Preventive Division, USACHPPM, from 1994 - 1995; served as an occupational and environmental medicine physician from 1995 - August 1999; and as Program Manager, Occupational and Environmental Medicine, from August 1999 - present.

Weese participated in the development of documents on chronic oral toxicity values for military chemical agents. These reference criteria are used to assess the health risk to protect communities and the environment from chemical warfare-related solid wastes. She also participated on a multi-disciplinary team that developed short- and long-term chemical exposure guidelines for use during military deploy-

ments. Technical Guide 230, Short- and Long-Term Exposure Chemical Exposure Guidelines for Deployed Military Personnel, filled an important gap in the AMEDD's ability to provide advice to commanders on the risks posed by occupational and environmental hazards

As primary USACHPPM representative, Dr. Weese served on a DOD Workgroup to develop the DOD Strategy to Address Low-Level Chemical Warfare Agent Exposures. She coordinated the work of a multi-disciplinary team to evaluate the Airborne Exposure Limits for Occupational and General Population Exposures to G Agents, VX, and Sulfur Mustard for the past several years. This team derived new short- and long-term exposure limits to protect workers and the general population related to demilitarization of the US chemical warfare agent stockpile. She presented the US Army recommendations in panels and public meetings at the Centers for Disease Control and Prevention in 2000 and 2001. Revised control limits were published in the Federal Register and final recommendations are expected from the US Department of Health and Human Services this year.

Dr. Weese also participated in the derivation of Acute Exposure Guideline Levels (AEGLs) for chemical warfare agents. These guidelines are intended for use by emergency response personnel to assess the short-term health risks to exposed personnel, following the release of an industrial chemical either from an accident or terrorist attack. She provided support to the medical management of personnel following accidental release of chemical agents from the US Army Chemical Stockpile. She provided leadership in the medical risk assessment and setting of exposure guidelines for chemical warfare agents. Through her efforts, new expo-

sure guidelines for military chemical agents were developed that are suitable for emergency planning, response, and prevention.

Dr. Weese excelled in her support to installation environmental risk assessments when novel and complicated situations arose. She consistently ensures that military and civilian personnel are protected from the risks posed by occupational and environmental hazards such as chlor-dane, asbestos, and beryllium. She actively participated in the Pentagon Post Disaster Response, providing risk assessments and re-entry criteria in support of consequence management activities. She drafted the risk stratification approach and personnel protection requirements for consequence management activities in support of Anthrax bio-terrorism events for DOD personnel.

She has also written critically on the topics of surveillance for environmental hazards. She has published a chapter and several papers on this topic as the DOD matures their surveillance systems in the wake of the Persian Gulf Conflict.

Weese earned her medical degree from the University of Southern California School of Medicine, Los Angeles, in 1986, and her master in public health at Johns Hopkins School of Hygiene and Public Health, Baltimore, Md, in 1991. She is board certified in occupational medicine and public health and general preventive medicine, a certified Medical Review Officer, and a Fellow American College of Occupational and Environmental Medicine.

Brig Gen William T. Bester, Commander, USACHPPM, introduced the keynote speaker, Joel C. Gaydos, MD, MPH, Director, Public Health Practices, DoD Global Emergency Infections Surveillance and Response System, Silver Spring, MD. He said, "Dr. Weese's success in developing policies, guidelines, and standards for dealing with chemical warfare agents, airborne contaminants, and environmental pollutants that have stood up to critical peer review is a testimonial to her professional and technical ability. Her expertise in bringing diverse professional people from many organizations into an efficient, effective team reflects her outstanding leadership ability. People want to follow her. She has been elected by her peers to every major office in the Maryland College of Occupational and Environmental Medicine."

Weese, accepting the silver trophy, said, "USACHPPM is really on the cutting edge of looking at health impacts to the Army. I am pleased to work with so many people who are experts in their area and work so hard. I just help people make decisions." She also thanked her children for letting her work even though it means, "I can't bake as many chocolate chip cookies", her mother, and her husband for his support throughout her career.

THE ORDER OF MILITARY MEDICAL MERIT



MAJ THOMAS C. DELK, USACHPPM-West, was inducted into the Order of the Military Medical Merit. The Order recognizes outstanding soldiers and civilians who make significant contributions to the Army Medical Department.

Since July 1999, MAJ Delk served as Chief, USACHPPM-West's Industrial Hygiene Division, Fort Lewis, WA. He re-established his regional industrial hygiene program into a world-class provider of technical occupational health and safety support. He led the efforts in doubling his staff from three personnel to six highly competent industrial hygiene professionals, procuring state-of-the-art industrial hygiene equipment and sampling methods, developing and providing innovative industrial hygiene mission services, and reestablishing his division's customer base within USACHPPM-West's 22-state region. He also served as the premier expert in deployment industrial hygiene in support of the Defense Occupational and Environmental Health Surveillance (DOEHS) Program. He single-handedly

developed procedures and identified additional equipment necessary to identify and evaluate occupational health hazards in a military field environment.

From January to July 2001, MAJ Delk supported Operation Joint Forge by serving as the Preventive Medicine Staff Officer for the Peace Stabilization Force (SFOR) Headquarters, in Sarajevo, Bosnia and Herzegovina (BiH). During his 6-month deployment, he developed a theater-wide environmental health hazard inventory, and he led the efforts to establish BiH's first nation-wide infectious disease surveillance program since 1991. These

initiatives currently serve as models for all military preventive medicine programs within the Allied Forces-South theater of operations. His contributions in this endeavor established a benchmark for excellence, and was hallmarked by MAJ Delk receiving the Defense Meritorious Service Medal.

From January 1995 to July 1997, MAJ Delk served as a Health Hazard Assessment Officer for the Health Hazard Assessment Program. He distinguished himself by providing expert leadership and technical guidance in the assessment of 77 military equipment systems, to include the Family of Medium Tactical Vehicles, the Armored Gun System, a variety of non-lethal weapon systems, and the M48 nuclear, biological, and chemical warfare agent protective filter. When implemented, the recommendations contained in these various assessments avoided over \$43.5 million in projected healthcare costs and disability claims for the US Army. MAJ Delk also deployed to Tuzla in support of Operation Joint Guard. As the team leader for a 30-day USACHPPM ambient air monitoring mission, he

was responsible for collecting and shipping over 230 air, water, and soil samples from February through April 1997. These sample results ensured that US soldiers serving in the Balkans were operating in a safe and healthy environment.

From May 1993 to June 1994, MAJ Delk served as Commander, 154th Medical Detachment (Sanitation), Camp Walker, Taegu, Republic of Korea (ROK). He converted the detachment from an authorized level of organization (ALO) 3 LB (Environmental Sanitation) detachment to an ALO 1 LX (Sanitation) detachment with minimal resources and logistical support. He was also instrumental in the development and execution of his area of responsibility's first formal drinking water surveillance plan. Previous to his command, MAJ Delk served as an Environmental Science Officer and Executive Officer for the 5th Preventive Medicine Unit's LC (Environmental Engineering) Detachment, Yongsan, ROK, from July 1992 to April 1993. He developed and executed a comprehensive preventive medicine support plan to protect the health and safety of over 10,000 soldiers participating in Exercise Team Spirit. His initiatives in each of his leadership roles significantly minimized the threat of disease and non-battle injuries, and safeguarded the well-being of the fighting forces in Korea.

From July 1991 to June 1992, MAJ Delk served as Environmental Science Officer for the 7th Infantry Division (Light), Fort Ord, CA. In support of this 12,000-soldier division, he developed and executed a Respiratory Protection

Program to protect the health of unit-level industrial workers in garrison, and he re-engineered the Field Sanitation Program for unit-level field sanitation teams to provide state-of-the-art support to warfighters in the field. He also served as the division point of contact for a high profile Shigellosis vaccine study requiring the participation of over 200 study participants over a 3-month period. Due to his technical and administrative guidance and support, this study contributed to the timely approval of an effective vaccine against Shigellosis.

From June 1989 to June 1991, MAJ Delk served as Chief, Environmental Health Section, Medical Department Activity, Fort Ord, CA. As a newly commissioned officer, he developed guidance for an installation-level Respiratory Protection Program to protect the health of Fort Ord's industrial workers, as well as a regulated medical waste management program to protect the health and safety of installation healthcare workers and the general public. He was instrumental in the proper disposal of hazardous waste generated from the installation's X-ray film developing solution/silver recovery systems, thereby avoiding a costly environmental protection compliance citation for the installation. Additionally, he reengineered the installation Food Service Sanitation Training Program to provide state-of-the-art training and food service protection.

MAJ Delk epitomizes every aspect of the Army values. His extraordinary accomplishments have significantly fortified the pillar of force health protection.

AIHA VICE PRESIDENT



Ms. Donna Doganiero, CIH, was elected vice president of the American Industrial Hygiene Association (AIHA). She is the Director, Occupational Health Sciences at USACHPPM. A member of AIHA since 1980, she has served the association in capacities including

membership on the Executive Committee, Finance Committee, Products and Services Task Force, and the Intersociety Credentialing Task Force. She has also served as the past director, secretary, treasurer, and president of

the Chesapeake Local Section of AIHA, as well as past secretary of the Washington-Baltimore Local Section of AIHA.

Doganiero holds a BA in biology from Rider College, an MS in human genetics from Rutgers University, and an MS in environmental health/industrial hygiene from Temple University.

The election, by mail ballot to all members, was held during March and April. Terms of office begin at the close of the AIHA business meeting on June 6, 2002. The business meeting is conducted during the American Industrial Hygiene Conference and Exposition that was held June 1 – 6 in San Diego.

MEDICAL SERVICE CORPS OFFICER IS SELECTED AS MARYLAND'S OUTSTANDING YOUNG ENGINEER OF THE YEAR

Captain Thomas C. Timmes, Water Supply Management Program, was selected as the Outstanding Young Engineer of the Year by the Maryland Society of Professional Engineers (MSPE), an auspice of the National Society of Professional Engineers. He was recognized at the MSPE 63rd Annual Banquet held in Annapolis, MD.

Mr. Jerry A. Valcik, Program Manager, Water Supply Management, said, "Timmes is a true professional engineer, consistently outstanding performer, a selfless and loyal soldier, a team player, and an inspirational leader. He is always seeking opportunities for self-improvement, as well as additional challenges and responsibilities. His exceptional ability to think on his feet, his meticulous attention to detail, and his analytical capabilities to integrate written and oral information to develop and execute best courses of action, coupled with his total understanding and internalization of the Army values, make him a strong and effective leader."

As Chief, Field Water Section, Timmes is responsible for assisting field commanders and their medical staffs in supplying adequate quantities of high quality drinking water to deployed soldiers. In light of heightened anti-terrorism/force protection and homeland security issues, he has taken the lead for water system vulnerability assessment planning to ensure the safety and quality of drinking water supplies at Army installations. His actions, accomplishments, and unlimited future potential clearly make him an excellent choice for the Outstanding Young Engineer Award. Timmes' significant accomplishments are described below.

- Development of a comprehensive Water Systems Vulnerability Assessment (WSVA) Protocol that is the only such document currently available to the Army's small- and medium-sized water utilities and public health professionals to identify threats, vulnerabilities, and recommended corrective actions to counter the threats of terrorist activity against the Army's drinking water systems.
- Presenting his WSVA technical paper at the March 2002 National Defense Industrial Association 28th Environmental Symposium in Charleston, SC.
- Conducting WSVAs at select Army installations and hosting training events for other engineers to conduct such assessments throughout the country.
- Obtained Profession Engineer registration in Maryland while completing a Masters Degree in Environmental Engineering from Johns Hopkins University (May 2000).
- Deployment as a member of the Special Medical Augmentation Response Team – Preventive Medicine to the Pentagon to conduct comprehensive sampling and assessment of its drinking water supplies in response to the 911 terrorist attack on our nation.

-
- Service as the subject matter expert for drinking water issues in support of Operation Enduring Freedom as well as the activities associated with the CHPPM's support to Homeland Security.
 - Conducted drinking water corrosion control studies at two Army installations as a part of his research work as a graduate student in the Environmental Engineering Program at the Johns Hopkins University.
 - Deployment as a member of the 82d Airborne Division to conduct extensive water sampling for the 1997 Partnership for Peace exercise with Uzbekistan and Kazakhstan.
- Timmes said, "I appreciate the opportunity to apply the skills and education the Army has provided me to make a contribution to the Homeland Security mission. I have clearly benefited from the mentorship of the USACHPPM's senior leaders and been fortunate to work with high-quality officers and engineers."



Captain Thomas C. Timmes, Environmental Engineer, takes water samples in the Pentagon in response to the 911 terrorist attack.

GROUND-WATER MONITORING SYSTEMS – ASSETS OR LIABILITIES?

The Ground Water and Solid Waste Program (GWSWP) offers ground-water monitoring well inspection/decommissioning/assessment services that aid in avoiding adverse health impacts and protecting the environment, while minimizing unnecessary monitoring and analytical costs.

During the past 20 to 30 years, many Army installations have had hundreds of monitoring wells installed. These monitoring wells have played an important part in the Installation Restoration process of the Army's Environmental Strategy. Their purpose is to monitor both the physical and chemical properties of the ground-water aquifer, usually to comply with state or Federal statutory or regulatory requirements. In-well testing enables one to measure the depth to water as well as the direction and rate of ground-water movement. Ground-water sample collection and analysis allows one to assess the nature, magnitude, and extent of any pollution that may be present. Some examples of facilities requiring ground-water surveillance include hazardous waste treatment, storage, and disposal facilities; industrial and maintenance operations; underground and above ground storage tanks; unlined wastewater lagoons; open dumps and landfills; range impact areas and firing points; open burning/open demolition areas; and fueling points.

Monitoring wells, when well maintained and functioning properly, provide much needed information. However, over the course of decades, many of the sites or releases that the wells were intended to investigate have been remediated and/or closed out with appropriate regulatory approval. Moreover, many of the monitoring wells fall into disrepair with time.

Some become difficult to find or installation personnel lose track of their existence. Many are left unsecured, are broken off by vehicles, fall victim to frost heave, or become silted-in or jammed with sampling paraphernalia. Where this is the case, often a potentially direct conduit for natural surface runoff or intentional pollution of ground-water aquifers is created. Finally, many installations have ongoing monitoring programs that require sampling of a large number of wells for a large number of expensive analytical parameters. In some instances, more wells are sampled for more parameters than currently necessary, resulting in expenditure of substantial unnecessary expenses.

The new services offered by the GWSWP are designed to eliminate or mitigate most of the above-mentioned problems. The Monitoring Well Inventory is a service that consists of an in-depth records search, interviews, and field inspection to locate existing monitoring wells, to verify accurate locations using Global Positioning System technology, and to catalogue and precisely plot locations on map products using Geographic Information System technology. In addition, the external and internal condition of each well is thoroughly investigated. Externally, we look at the integrity of the casing, cap, grout seal, locking cover, and physical protection as well as clearly defined identification and ability to be located. With our new down hole camera capability, wells are inspected from top to bottom, to include below the water level. Conclusions are made that address the well's effectiveness, integrity, and potential as a contamination pathway. Recommendations may include appropriate methods for well rehabilitation, replacement, or decommissioning.

Well decommissioning is a service wherein wells, which are broken, no longer functional, or no longer needed, are properly abandoned. Each state has regulations, which require wells of this type to be decommissioned; however, requirements to do so are quite varied in both technical specifications and cost. Examples range from simply filling the well with earth or grout to cutting and removing the entire casing.

The GWSWP also has the capability to develop ground-water monitoring systems and plans for facilities with new requirements for surveillance. We also evaluate existing ground-water monitoring programs to determine if monitoring wells are located and constructed properly to adequately monitor the intended sites; if the system is meeting current regulatory requirements; and if the monitoring program is cost effective.

In summary, our new services described above all serve to enable the collection and evaluation of appropriate, accurate, and reliable ground-water quality data to monitor pollution trends ultimately or potentially impacting downgradient drinking water supplies, both on post and off post. They are designed to assist the garrison in maintaining a viable monitoring program, which meets regulatory requirements. They help to eliminate potential direct conduits for natural or artificial contamination of aquifers, thereby protecting on post and community (off post) drinking water sources from harmful pollutants and the consumers from adverse health effects. (POC: Mr. John Bauer, DSN 584-5238, 410-436-5238, or 1-800-222-9698)

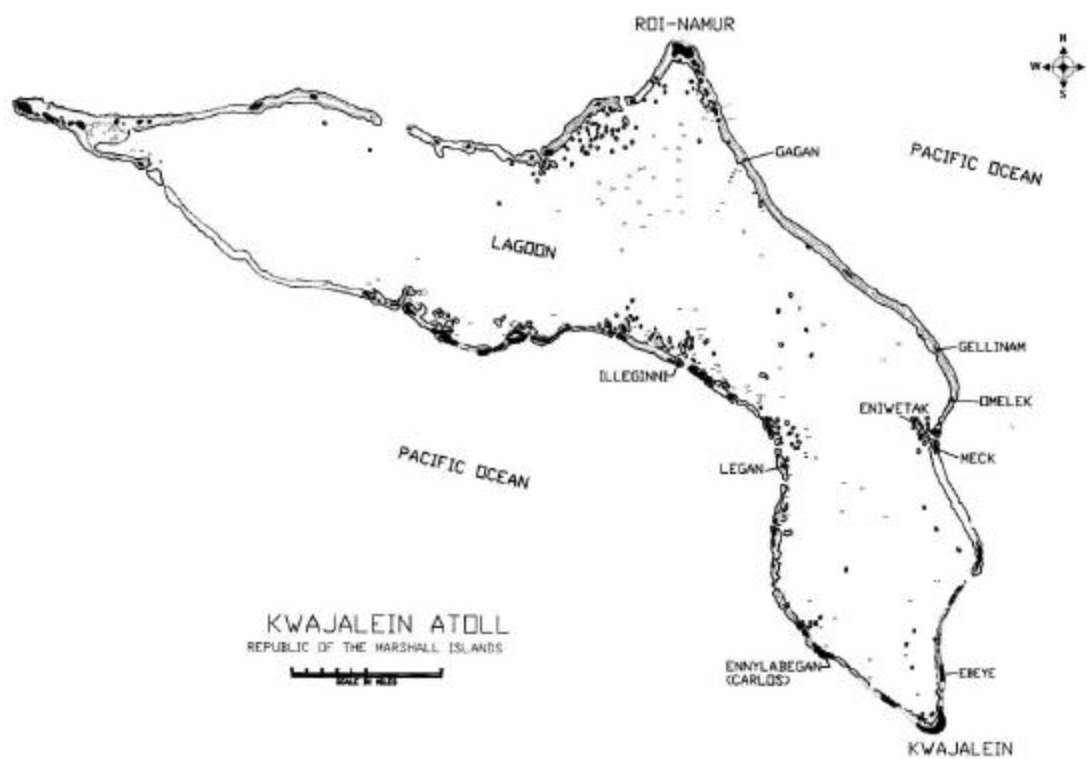
GIANT CLAMS – POLLUTANT SENTINELS FOR THE NATIONAL MISSILE DEFENSE TESTING PROGRAM

“What pollutants are we discharging?” and “Where are they coming from?” are two primary questions environmental managers are asking at facilities that border our coasts. The Surface Water and Wastewater Program of USACHPPM has developed a novel approach to answering these questions for the U.S. Army Kwajalein Atoll (USAKA), a missile testing facility in the Pacific Ocean. Giant clams were used as sentinel organisms for identifying pollutants and their sources.

The Army leases 11 of the 100+ islands on the Kwajalein Atoll from the Republic of the Marshall Islands. These islands are located about 2,100 nautical miles southwest of Honolulu, Hawaii. The Army uses the Atoll primarily as a test and evaluation range for ballistic missiles and to support the Nation’s space surveillance program. USAKA is mostly concentrated on the two largest islands – Kwajalein, the southern most island, and Roi-Namur, which is located 45 miles to the north, as shown on page 20.

The USAKA facilities use a series of pipes to discharge storm water runoff, treated sewage, industrial wastewater, and heated cooling water to the lagoon and ocean. These discharges have the potential to carry harmful manmade

pollutants to plants and animals living in the nearly pristine waters, as well as, humans who consume fish and shellfish.



To measure the cumulative impact of the discharges on the marine ecosystem, the Surface Water and Wastewater Program initiated a bioassessment program using the giant clam species, *Tridacna maxima*, as an indicator organism. The clams have the unique ability to bioaccumulate pollutants in their tissues, and can thus indicate the type and amount of pollution in the water.

Juvenile clams were deployed in predator-exclusion cages for a 3-month period in the vicinity of pollutant sources and reference sites. The 2-inch long clams used in this study were raised at a clam farm on a nearby atoll and flown to the Kwajalein Atoll. Naturally occurring clams, which can reach 5 feet in length, are protected by an international treaty and could not be used for this study.

At the end of the exposure period, the clams were recovered and the tissue was submitted for chemical analysis [metals, polynuclear aromatic hydrocarbons (PAHs), pesticides, and polychlorinated biphenyls (PCBs)]. The analytical results showed that the giant clams were a successful bioindicator with tissue samples near pollutant sources containing higher chemical concentrations than the reference site samples.

Clam studies were performed during both the wet and the dry weather seasons to differentiate between pollutants introduced by the USAKA storm water discharges and those released from historically contaminated marine sediments. The resulting analyses showed that both storm water discharges and sediments were significant sources of pollutants in the near shore marine environment. Comparisons of clam tissue, sediment, and storm water sample results point to USAKA discharges as the primary sources of copper and certain PAHs, pesticides, and PCBs.

Clams from monitoring sites at the Kwajalein Harbor and Landfill contained lead concentrations, that exceeded the Food and Drug Administration consumption screening levels. As a result, USACHPPM assisted USAKA in implementing a public notification program, including posting fish consumption advisory signs, while a site-specific human health risk assessment is conducted to determine if unacceptable risk is present.

The benefits of these studies were twofold. Not only did they identify contaminated storm water sources and sediments that need to be addressed in the future, but they also demonstrated that the giant clam, *Tridacna maxima*, could be successfully used as a good bioindicator of marine pollution. The giant clam has the ability to equilibrate pollutant tissue concentrations relative to the pollutant concentrations in the water column, thus offering an effective and economical approach to pollution monitoring of coastal waters.

The giant clam studies are part of a tiered screening approach being used by the Surface Water and Wastewater Program to determine if additional pollutants must be removed from any discharges. During earlier steps in the monitoring process, the extent to which pollutants spread out through the marine waters from the discharge pipes was determined by chemical analysis of water samples. A computer-mixing model was used to predict the boundary of pollutant migration. Based upon this tiered approach, specific discharges have been targeted to be eliminated or made cleaner. The giant clams will be used in the future to confirm that pollutant reduction measures are working. (POC: Mr. James Albert, DSN 584-7685, 410-436-7685, or 1-800-222-9698)



Example of the species of giant clam used in the study, Tridacna maxima.
Photo by: Jeanette Johnson

HEALTHCARE PROVIDERS ARE ON THE FRONTLINE FOR MEDICAL SURVEILLANCE

Today's healthcare providers are faced with numerous clinical and administrative requirements in providing quality patient care. Quality ambulatory encounter data have emerged as a critical need following recent bioterrorism related anthrax events and the stark realization that further bioterrorism attacks can occur against our nation. These recent events have enhanced the need to rapidly detect health threats that may be acts of bioterrorism. Rapid detection of emerging health threats allows Commanders to prioritize health care resources in response to any outbreaks or medical threats.

The ability to efficiently capture all ambulatory encounter data through the ambulatory data system (ADS) is being enhanced daily and is critical in allowing appropriate surveillance for potential emerging medical threats. To assist in rapidly detecting emerging health threats there are two primary military medical surveillance systems that are dependent upon quality ambulatory encounter data: the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) and the Reportable Medical Events System (RMES).

ESSENCE is a research subsystem under the DoD Global Emerging Infections System that actively collects data from ambulatory encounters and provides for the early recognition of potential community-based epidemics. This system obtains a daily worldwide ADS

download, groups the diagnoses from ADS into seven syndromic groups, conducts analysis and monitoring of data, and applies a Geographic Information System to the analysis. Further information can be found at <http://www.geis.ha.osd.mil/>

RMES is an active medical surveillance system within the Defense Medical Surveillance System. Summary statistics from RMES are accessible through the Internet from the Defense Medical Epidemiology Database (DMED). RMES automatically transmits data for 70 reportable medical events to the Defense Medical Surveillance System warehouse, applies analysis and interpretation to the data, and provides summary reports as feedback. Further information about RMES can be found at http://amsa.army.mil/AMSA/amsa_home.htm

Both ESSENCE and RMES are powerful medical surveillance tools that can provide for the rapid assessment of emerging medical threats that can potentially confront our military healthcare system and our nation today.

The effectiveness of these medical surveillance systems is dependent upon the quality of ambulatory encounter data entered into the system. In today's world of constant vigilance against natural and man made threats, healthcare providers are a vital link in medical surveillance and on the frontline of providing quality ambulatory encounter data. (POC:

COL George J. Dydek, DSN 584-3534, 410-436-3534, or 1-800-222-9698)

HIV/AIDS TRAINING

COL Gemryl Samuels and LTC Michael Custer, were in Georgetown, Guyana, at the request of U.S. Southern Command (SOUTHCOM), from 12 -17 May, 2002, as subject matter experts for an exchange of information on HIV/AIDS between USACHPPM and the Guyana Defence Force. The two officers conducted classes on knowledge and prevention of sexually transmitted diseases, HIV infection, and AIDS to approximately 400 soldiers of the Guyana Defence Force (GDF). Special classes were conducted with Medics and the GDF Educational Corps on train-the-trainer techniques to assist them in providing training to others. Additionally, they provided information to

the senior leadership of the GDF on education and policy as practiced in the United States Army for managing HIV/AIDS infection among U.S. soldiers. The trainers stressed the unique characteristics of the AIDS pandemic in Guyana. The purpose of the visit was to develop friendship and cooperation between the Guyanese hosts and their U.S. counterparts as well as to assist in equipping GDF medical personnel to effectively respond to the HIV/AIDS threat. The message was well-received. (POC: COL Gemryl Samuels, DSN 584-2303, 410-436-2303, or 1-800-222-9698)

CERVICAL CANCER: DEADLY, BUT PREVENTABLE

Cervical cancer is a woman's health issue that may be difficult for a woman to discuss with her healthcare provider. Women may desire reliable information about cervical cancer while healthcare providers may be reluctant to address the issue because cervical cancer risk factors involve the sensitive areas of personal sexual behavior and regular medical screening using the Papanicolaou test (Pap test).

As reported by the Centers for Disease Control and Prevention (CDC), the number of cases of actual cervical cancer in the United States has decreased substantially since 1950. The CDC credits this largely to the effective use of the Pap test by healthcare providers. An estimated 12,900 new cervical cancers and

4,400 cervical cancer deaths occurred in the United States in 2001.

The key to cervical cancer prevention is the Pap test. Because cervical cancer occurs gradually in stages, a Pap test is used to detect cells showing early changes that could lead to cervical cancer prior to the development of cancerous tissue. When cellular changes are detected early and preventive treatment occurs before the presence of cancerous tissue, the CDC states that cervical cancer is 95 percent preventable.

The Pap test is a simple screening exam that most women should have every year, or no less than once every three years if the woman has no risk factors for cervical cancer. As

reported by the National Cancer Institute (one of the major research institutes at the National Institutes of Health), women who do not have regular Pap tests are at a higher risk for developing cervical cancer. Importantly, there is no upper age for Pap tests to be discontinued, and women age 65 and older make up 41 percent of the deaths resulting from cervical cancer.

Other important risk factors are: early onset of sexual activity, multiple sexual partners, infection with certain types of human papillomavirus (HPV), the presence of other sexually transmitted diseases, having sexual contact with someone having a sexually transmitted disease, exposure to tobacco smoke, present infection with human immunodeficiency virus (HIV), and poor nutrition.

Having a regular Pap test is the key to preventing cervical cancer in all women. Unfortunately, women from certain ethnic minorities tend to have fewer Pap tests than white women. All women from all ethnic groups are susceptible to cervical cancer and having a regular Pap test provides the best method to avoid this deadly, but preventable disease.

Further reliable information about the prevention of cervical cancer is available online from the National Cancer Institute at

<http://www.cancer.gov>

or by phone at 1-800-4-CANCER. (POC: Mr. Brad Taft, DSN 584-4656, 410-436-4656, or 1-800-222-4656)



GOT CALCIUM?

The popular advertising campaign created by the California Milk Advisory Board asks: "Got milk?" A better question might be: "Got calcium?" Contrary to popular belief, your body never outgrows a need for calcium. National Dairy Month (June) is a good opportunity to take stock of your answer to: "Got calcium?"

Most people know that calcium helps build strong bones and teeth. Calcium also helps muscles to contract and relax, blood to clot, and the nervous system to function well. Calcium is the most abundant mineral in your body. Ninety-eight percent of the calcium in your body is stored in your bones and teeth. The remainder is in your blood and soft tissues.

The calcium in your diet protects the calcium in your bones. When you do not get enough calcium from the food that you eat, your body automatically takes the calcium it needs from your bones. Over time, these calcium "withdrawals" will add up and weaken your bones.

Most Americans do not get nearly enough calcium in their diets. According to the National Institutes of Health, 70 percent of adults, 75 percent of boys aged 9 to 17, and 90 percent of girls aged 9 to 17 do not get enough calcium everyday.

How much calcium do you need? According to the NIH, adults aged 19 to 50 need at least 1,000 milligrams (mg) of calcium per day. Adults 51 and older need 1,200 mg. Young people aged 9 to 18 need 1,300 mg. To put these requirements in perspective: one cup of milk contains about 300 mg of calcium, eight ounces of yogurt contains between 270 and 450 mg of calcium, and one ounce of mozzarella cheese contains about 200 mg of calcium.

You can increase the amount of calcium in your diet by eating foods that are rich in calcium.

Dairy products are the best source of calcium in our food supply. For those concerned with fat content, low-fat dairy products offer just as much (if not more) calcium than their full-fat equivalents.

Other sources of calcium include green leafy vegetables (like mustard greens and broccoli), canned fish (like salmon and sardines with bones), nuts and seeds (like almonds and brazil nuts), and tofu. If you're not a milk drinker, you can still enjoy the 300 mg of calcium in one cup of milk by adding one or two of the following to a cup of milk: ½ cup of fresh or frozen strawberries or blueberries; 1 pureed banana with ½ teaspoon of honey; or ¼ teaspoon of vanilla or almond extract. Another option for those who do not tolerate milk well are products with calcium added, such as orange juice.

Take advantage of National Dairy Month to increase your calcium intake. Got calcium? Say "yes!" (POC: Ms. Carlla E. Jones, DSN 584-1329, 410-436-1329, or 1-800-222-9698)

For more information:

www.nichd.nih.gov/milkmatters

<http://www.nationaldairycouncil.org/>



WHEN EXERCISE AND ASTHMA COLLIDE

Have you ever found that strenuous exercise makes you cough or wheeze, especially when the weather is cold? This could be a signal that you are suffering from a form of asthma called exercise-induced asthma (EIA) or exercise-induced bronchospasm. This type of asthma is actually not uncommon and occurs in approximately 10 to 15 percent of the general population. Some of the symptoms of EIA are wheezing, coughing, shortness of breath, chest tightness, fatigue, and decreased athletic performance.

Asthma affects the airways and bronchial tubes in your lungs so that they are extra sensitive. EIA is a condition in which the bronchial tubes are constricted and narrow significantly during or after vigorous physical activity, although there is not much inflammation. According to the American College of Sports Medicine, the underlying causes of EIA are not clear but are thought to be due to changes in airway temperature, changes in airway dryness, and congestion of the bronchial arteries. These conditions cause the mucosal vessels to become engorged resulting in acute airway narrowing of the lungs.

EIA is frequently triggered by something that sets off an attack. The most common is strenuous activity in cold, dry air. Some other triggers occur during or after physical activity when breathing is hard, heavy or fast, when air is cold, when humidity is very low or very high, when air pollution is high, when the allergen count is high in the air, and when there is an infection of the breathing passageways.

Should people with EIA stop exercising? No, definitely not. Enjoyable safe exercise is even more important for someone with asthma. It

takes about 6 minutes of exercising to bring on EIA. Different kinds of exercise may cause more wheezing or chest tightness than others. Swimming is better than running or cycling indoors, which is better than running outdoors. Sports and exercises, which consist of short bursts of activity with rest periods in between, may be more suitable for people with EIA.

If you suffer from this condition, what can you do to reduce your frequency of attacks? See your physician to receive appropriate overall medication to control your asthma. Current treatments for EIA include the use of bronchodilators, anti-inflammatory compounds, and a variety of other medications.

As directed by your physician, you may use a short-acting reliever inhaler 15 to 30 minutes before exercising as a preventive measure. Your physician may also recommend a long-acting reliever aerosol spray or one-a-day-pill that may be able to reduce the drug dosages and side effects of these medications.

Choose exercises in settings that allow for warm, moist air such as swimming. Warm-up with short periods of light exercise before exercising and get into a regular training routine.

Increased breathing during exercise causes the lining of the airways to become cooler and drier, possibly bringing on the asthma attack. During winter you may need to exercise indoors or wear a cold weather facemask to keep cold, dry air from entering the airways. Wearing a mask warms the air before you inhale it. Breathing through your nose also warms the air more than mouth breathing and may prevent EIA.

Many people, including successful athletes, have EIA. You can remain healthy and physically fit with proper education and use of medication.

If you are interested in additional information on asthma, some resources are:

“Managing Your Asthma: A Patient’s Guide” pamphlet. The pamphlet may be ordered from the Asthma Toolkit through the U.S. Army MEDCOM Quality Management Office at <http://www.cs.amedd.army.mil/qmo/asthfr.htm>

Asthma and Allergy Foundation of America, www.aafa.org

National Asthma Education and Prevention Program, National Heart Lung and Blood Institute

Information Center, www.nhlbi.nih.gov/nhlbi/ntlalbi.htm

American College of Sports Medicine Current Comments, January 2000 on Exercise-Induced Asthma, <http://www.acsm.org/pdf/EIA.pdf>

(POC: Ms. Lisa Young, DSN 584-7844. 410-436-7844, or 1-800-222-9698)

BODY, MIND AND SPIRIT

What helps some people who are abused, oppressed, or just unlucky survive and even thrive? How do they stand firm in the end? Perhaps mind over matter or brute strength make a difference; however, the ability to connect with the spirit of life itself propels them over the top. Body and mind may get first consideration, but spirituality moves survival into the realm of triumph.

Jared and Lynn Kass developed a resource that will help you become more aware of your spiritual resiliency: the Spiritual Resiliency Quiz. This quiz will allow you to first recognize and then measure your spiritual assets. It can be found on

<http://www.hooah4health.com/spirit/resiliencystart.htm>

Using this resource, you will discover how your spirituality impacts day-to-day life so that you can turn mere survival into real triumphs.

Jared and Lynn Kass, in their Spirituality and Resiliency Assessment Packet, define spirituality as “connectedness.” They propose that spirituality spans both human and divine relationships. The spiritual person links with others and with the divine “Other” (God or a higher power, as defined by the individual), producing resources for living and giving.

The spiritual resource that helps us to live life to its fullest, bending not breaking with adversity, is called resilience. As a bridge sways and returns to center, so the spiritual person holds steady in the storms of life. The Army values of loyalty, duty, respect, honor, integrity, and personal courage reflect this two-fold connectedness.

Richard J. Gilmartin proposes another aspect of spirituality in his book, Pursuing Wellness Finding Spirituality. He says that spirituality is reaching out to others as in the Army value of selfless service. Selfless service often exceeds our own resources and taps into the connectedness of spirituality.

Connectedness, then, encompasses both resilience and responsiveness. Spiritual people can bounce back and maintain their identity and inner balance. They respond with resources beyond themselves to accomplish great feats. When we are able to access and express our spirituality, it supplements mental and physical health. As the professional athlete compensates for broken bones by relying on enhanced nerve and muscle systems, so the spiritual person can compensate for mental or physical limitations with spirituality. How can we increase spirituality to enhance our performance?

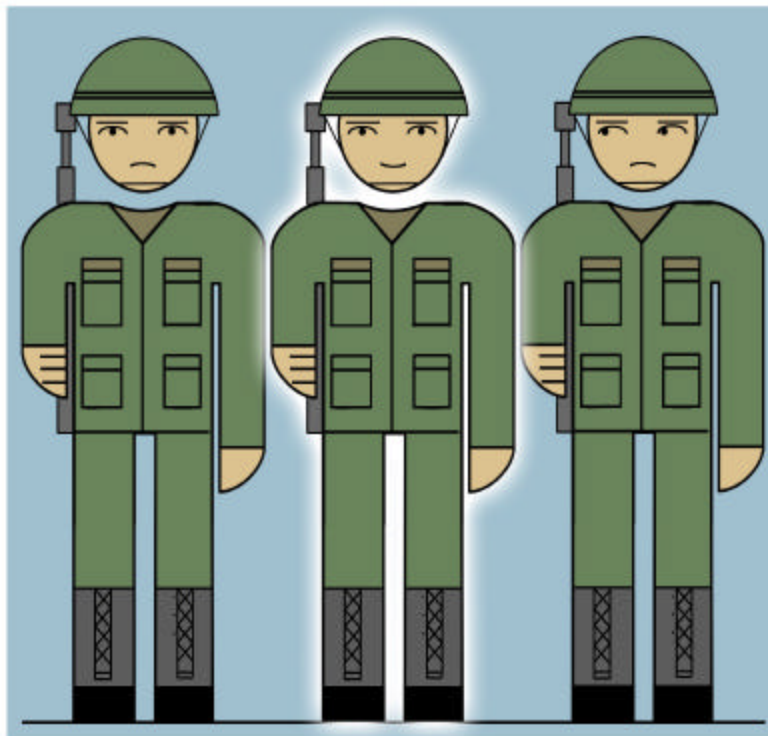
First, we need to take time to address spirituality. Both resiliency and responsiveness can be enhanced through individual study and group meetings. Prayer, meditation, and worship provide an avenue toward increased connectedness. Practicing your faith adds to your reservoir of resources.

Then, tapping into your spirituality for daily activities helps you access spiritual resources in times of distress or crisis. "The practice of

spirituality," say David and Susan Larson in a study entitled *The Faith Factor*, "enhances feelings of well-being up to 400%." Their studies reveal enhanced recovery rates in patients with less depression and distress upon discharge from the hospital, as well as reduced rates of suicide.

Spiritual practice is also beneficial for combat survival. Commander Porter A. Halyburton, U.S. Navy (Ret.) spent seven and a half years imprisoned by the North Vietnamese. He credits his Christian faith with his dignified and honorable survival, saying, "I knew that this was something that my captors could never take away from me."

Soldiers learn survival skills and develop their strength and agility to survive any ordeal and accomplish the mission. However, relying on mental and physical abilities alone may not work. If you are unsure about your ability to leverage your spiritual assets, why not begin with the Spiritual Resiliency Quiz? (POC: LTC Gregory L. Black).



RADIO FREQUENCY RADIATION (RFR) MONITORS ALARM SYSTEMS

In the wake of an RFR exposure, those involved often suggest installing an RFR detector that sounds an alarm when RFR is present (like a chemical agent detector). At first blush this suggestion seems reasonable. One would assume that the absence of an alarm implies all is well. However, there are issues associated with reliability of the alarm, sensitivity of the detector, and distribution of the RFR, which usually make this suggestion untenable.

RFR leakage from a damaged or defective waveguide is the primary cause of most RFR exposure incidents. The RFR levels will decrease to less than the maximum permissible exposure (MPE) limit 1 meter from the leak. Unless the alarm sensor happens to be located close to the leak a worker could receive an RFR overexposure without the alarm sounding. This illustrates how the alarm is an unreliable indicator of safety.

The detector sensitivity must be such that it does not sound under normal operating conditions, but only sounds when an abnormal condition exists (broken waveguide). The high power RFR sources used by the Army are designed to

generate RFR that exceeds the MPE limits. Unless the detector is placed in proximity to possible leakage points and away from the system antenna, it will either miss the hazardous event or sound when no threat is actually present.

Personal RFR detectors that are worn are also inappropriate for the same reasons already cited. In addition, the typically incoherent distribution of RFR could place the worker into a RFR field without sounding an alarm. If the alarm threshold is set low, it could create confusion and anxiety. Some workers may actually feel sick when they hear the alarm even if the RFR levels are extremely low.

The best way to prevent RFR overexposure is vigilant adherence to an RFR protection program. This program may include visual inspection of waveguides, interlocks, warning signs, and safety training. The Radio Frequency and Ultrasound Program is available to help design effective RFR protection programs. (POC: Mr. Juergen Brammer, DSN 584-6606, 410-436-6606, or 1-800-222-9698)

NOVEL USES FOR A MATURE TECHNOLOGY

We are all familiar with microwave ovens. Our fast passed lives would not be the same without them. We know metal twisty ties and microwave ovens do not mix. We marvel that over heating water with microwaves can trigger sudden eruptions of hot liquid. And never, ever, try to hard boil an egg in one. The latest idea is to sterilize mail in the microwave oven. Here are some reasons not to try this at home:

Mail sometimes contains paper clips or staples. This could cause your mail to go up in smoke.

You might damage the contents.

There is not enough water in most mail to absorb the energy. Microwave ovens do not like to run on empty, so the magnetron could be damaged.

Microwave radiation leakage from the oven will be higher.

In October 2001, letters containing anthrax spores terrorized the country. An idea to sterilize mail in microwave ovens was circulated in the wake of this incident. Dr. Ken Alibek, a former deputy director of the Soviet Union's massive germ-warfare program, had suggested ironing or microwaving mail if you are scared. Although these methods were not endorsed by any government agency, the idea caught on with the general public. Advice on how to correctly handle suspicious mail is available at:

<http://chppm-www.apgea.army.mil/HomelandSecurity/Mailhandling.pdf>

As with most specious ideas, there is a grain of truth beneath the surface. Microwave energy is used for sterilization of food and sanitation of waste. The Food and Drug Administration published a report describing this food sterilization process (Kinetics of Microbial Inactivation for Alternative Food Processing Technologies,

Microwave and Radio Frequency Processing, dated 2 June 2000). "The energy absorption from microwaves and radio frequency can raise the temperature of the food high enough to inactivate microorganisms for effective pasteurization or sterilization. A number of studies have proven that the thermal effect is the essential contributor to the destruction of microorganisms."

More research is necessary before we can consider employing microwave energy to destroy microorganisms that might be packaged in letters or boxes. We need to know the proper microwave dose required to sterilize or inactivate microorganisms. We also need to ensure that the microwave energy does not damage the contents of the mail.

Variable frequency microwave (VFM) is a new technology that is being explored as a potential candidate for addressing some of these issues. Preliminary tests of VFM were conducted by Dr. Reisner of the University of North Carolina - Chapel Hill. He reports achieving a 100 percent kill rate of harmless test spores after a 2-minute exposure to VFM without damaging the mail packages containing the sample spores. Information regarding this technology and Dr. Resner's studies can be found at:

<http://www.microcure.com/AnthraxNews.htm>

In the mean time, keep your mail out of your microwave. (POC: Mr. John DeFrank, DSN 584-6610, 410-436-6610, or 1-800-222-9698)

LASER AND RADIO FREQUENCY RADIATION HAZARDS WORKSHOP

Each spring, the Laser/Optical Radiation Program and Radiofrequency/Ultrasound Program hosts the 4.5-day Laser and Radio Frequency Hazards Workshop. This course is sponsored by the Army Medical Department Center and School with emphasis on the prevention of injury due to nonionizing radiation exposure. This educational experience has been a tradition in the Army community for more than 30 years. Attendees have included civilian and military personnel from all elements of the DoD, and foreign military officers. The target audience is Radiation Protection Officers, Laser Safety Officers, and related health and safety personnel whose responsibilities include establishing and managing effective nonionizing radiation protection programs. Particular emphasis is placed on recognizing nonionizing occupational hazards that are most commonly encountered within the Department of the Army.

The FY 02 course was offered 15-19 April in Edgewood, MD. The topics covered during this course included: facts and myths of the current visible laser pointer issue and cellular phones;

biological effects of optical radiation and radiofrequency radiation (RFR); the development of laser protection and RFR standards and exposure limits; medical laser safety – the associated hazards and appropriate control measures; laser hazard classification; laser eye protection; laser range controls; RFR antennas and patterns; RFR hazard evaluation and site surveys; RF generation and propagation; and RFR systems applications.

The course also features a full day of laboratory demonstrations and a night-time laser demonstration. These demonstrations give the students a visual, hands-on, realistic conception of the potential nonionizing radiation hazards in the occupational environment.

To register for the FY 03 course contact Ms. Diana Brewer at DSN 584-6647, 410-436-6647, or 1-800-222-9698.

email: Diana.Brewer@apg.amedd.army.mil,

Internet: <http://chppm-www.apgea.army.mil/trng/datepage.htm>

DoD ERGONOMICS CONFERENCE

The DoD Ergonomics conference was held 29 – 30 April in Chantilly, VA. Conference attendees left with the tools for their ergonomics toolboxes that we promised them. Everything they heard about what other agencies were doing, they will be able to truly use. Because one of the great advantages of this DoD conference is that the information presented all shareware, attendees can copy everything they were provided, put their local name on it, and put it in place.

The information provided was offered by high-level presenters, people considered ergonomics movers and shakers. The conference brought together DoD, OSHA, and AFL-CIO

leadership coupled with world-class speakers from all the military services, university system, and private industry. Topics ranged from the practical application of how good ergonomics is using risk management in an ergonomics program to vibration hazards to cost benefit application.

Copies of many of the speakers' presentations and handouts are posted to the following web site: <http://chppm-www.apgea.army.mil/ergowg/conference>



On 1 October 2001, a new directorate was formed called Health Risk Management. Mr. John Resta was appointed Director. His previous assignment was as the Program Manager for the Deployment Environmental Surveillance Program.

Resta has a bachelor's degree in environmental engineering from

Pennsylvania State University and a master's degree in civil engineering from the University of Delaware. He is a registered professional engineer, State of Maryland and has been assigned to the USACHPPM since 1980.

The mission of the new directorate is to enhance readiness by providing worldwide guidance and support to commanders with the information required to make risk management decisions based on available health risk assessment data, as well as analyses and strategic planning to address social and political factors in the decision making process. The technical programs within the directorate include:

Environmental Health Risk Assessment – to determine human health risks in support of the DOD community and preventive medicine programs

worldwide. Program Manager: Mr. Dave Daughdrill

Public Health Assessment, DOD Lead Agent for the Agency for Toxic Substances and Disease Registry Program – to provide technical support and consultative expertise at any hazardous waste facility for the evaluation of possible exposure and potential public health effects associated with that exposure. Acting Chief: Mr. Michael White

Deployment Environmental Surveillance – assess occupational and environmental exposures that deployed troops may encounter and evaluation of potential health risks. Acting Program Manager: Dr. Jack Heller

Health Risk Communication – provide consultation and training in developing and maintaining strategic partnerships, analyzing social and political factors of human health risk issues, and developing strategic plans to integrate scientific, technical and stakeholder interests into comprehensive risk management decision processes. Program Manager: Ms. Marilyn Null.

USACHPPM-North

WATCH FOR WEST NILE VIRUS

EDITOR'S NOTE: The following article was prepared by Mr. Kevin Fay, Pest Management Coordinator, Fort George G. Meade, MD, which was published in the Fort Meade paper. We encourage all installations to work with their installation's Public Affairs Office and local papers to get their program elements (dead bird surveillance, mosquito surveillance, larval breeding site reduction, etc.) out to the general installation population.

The Department of Public Works (DPW) Entomology Section, Fort George G. Meade Medical Department Activity (MEDDAC) Environmental Health Section, and the USACHPPM-North have been coordinating an effort to combat the possible spread of West Nile Virus (WNV) on the installation since the spring of 2000. West Nile Virus surfaced in New York City in the summer of 1999. There have been numerous cases of the virus reported throughout the eastern United States. West Nile Virus is primarily spread by Culex mosquitoes.

West Nile Virus is of concern on Fort Meade because the virus has been found in some birds and mosquitoes not far from the installation. Mosquitoes become infected when they feed on infected birds, which may circulate the virus in their blood for a few days. After an incubation period of 10 days to 2 weeks, infected mosquitoes can then transmit WNV to humans and animals while biting to take blood. The virus is located in the mosquito's salivary glands. During blood feeding, the virus is then injected into the animal or human, where it then multiplies and may cause illness. Most infections are mild and symptoms may include fever, headache, and body aches, often with skin rash and swollen lymph glands. More severe infection may be marked by headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, paralysis and, rarely, death.

Throughout the spring and summer, the DPW will be identifying potential breeding sites for mosquito vectors and will be taking measures to correct any problems before they occur. The FGGM-MEDDAC and USACHPPM-North will be trapping mosquitoes and testing them for the virus throughout the summer months. To date, no indications of the virus has been detected on the installation. If the virus is found on the installation DPW, FGGM-MEDDAC, and USACHPPM-North will work in concert to develop and implement a strategy to combat the virus.

Early detection and larval treatment is the most effective form of mosquito control. A coordinated larval control program early in the mosquito breeding season will prevent problems from occurring during the summer months.

Residents of housing and building occupants can also help by identifying areas around their buildings and homes that may have the potential for collecting and holding water and taking appropriate corrective measures. Cleaning up water collecting debris such as buckets, flowerpots, and poorly maintained kiddie pools will help in reducing the threat. Sometimes it is as simple as making sure buckets, empty containers, or other types of water collecting items are stored upside down so as not to collect water. Cleaning birdbaths weekly so stagnant water does not collect in them will also prevent mosquitoes from breeding.

You can also lessen the risk of being bitten by mosquitoes by taking the following precautions:

- Stay indoors at dawn, dusk, and in the early evening.
- Wear long-sleeved shirts and long pants whenever you are outdoors.

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- Apply insect repellent sparingly to exposed skin. An effective repellent will contain 20% to 35% DEET (N,N-diethyl-meta-toluamide). DEET in high concentrations (greater than 35%) may cause side effects, particularly in children; avoid products containing more than 35% DEET.
 - Repellents may irritate the eyes and mouth, so avoid applying repellent to the hands of children. Insect repellants should not be applied to very young children (< 3 years old).
 - Spray clothing with repellents containing permethrin or DEET, as mosquitoes may bite through thin clothing.
 - Whenever you use an insecticide or insect repellent, be sure to read and follow the manufacturer's DIRECTIONS FOR USE, as printed on the product.
 - Remove standing water around your home. Pay special attention to any containers that may collect water and store them in a manner that would not allow water to accumulate in them.
 - Note: Vitamin B, ultrasonic devices and bug zappers are NOT effective in preventing mosquito bites or controlling mosquitoes.

- Install and use yellow bug lights at exterior door entrances, including garage and carport areas. Yellow bug lights will attract fewer mosquitoes and other flying insects to your door, reducing the number of uninvited guests in your home or office.

Building occupants and residents of housing should immediately report any dead birds to the DPW Entomology Section at 677-6023/2521. Technicians will respond, collect the bird and have the bird sent out for testing.

Any questions about WNV can be directed to the Fort Meade MEDDAC, Environmental Health Section-Preventive Medicine Service at DSN 622-8901 or 301-677-8901. For general questions about mosquitoes call the DPW Entomology Section at 301-677-6023.

Should you have any specific health concerns contact your medical provider.



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